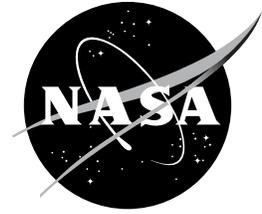


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PRESS BRIEFING: STS-107 COLUMBIA MISHAP UPDATE NASA HEADQUARTERS FEBRUARY 4, 2003

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TRANSCRIPT:

ROBERT MIRELSON: Good afternoon and welcome to NASA Headquarters. Today I'd like to introduce Major General Retired Michael C. Kostelnik, our deputy associate administrator for the International Space Station and the Space Shuttle.

General Kostelnik is going to give us an update on what's been going on for the last twenty-four hours. Then we'll take some questions.

And, again, let me reiterate, we're not really here to do a technical briefing today; just to bring you all up to speed on what's been happening.

General Kostelnik.

GENERAL KOSTELNIK: Well, good afternoon. This is a very special day for the country and a very special day for the men and women of NASA. I think you know we had our President and our Administrator and our senior NASA staff at the Johnson Space Center today attending a very important memorial ceremony where we were able to honor our fallen and console the families. It was an important day for us.

It's important to note there will be other days like this over the coming days as our other space flight centers take time off to make this honoring as well.

And I think you know in the Washington area at the National Cathedral this Thursday at 10:00 in the morning we will have another memorial.

Unfortunately this experience is not new for us and in honor of the men and women of Columbia, I would like to take us back sometime ago to the Challenger era to another president and great communicator who had the following thoughts that I think are equally germane today about these heroes.

"The future is not free. The story of all human progress is one of struggle against all odds. We learned again that this is America which Abraham Lincoln called the last best hope of man on Earth, was built on heroism and noble sacrifice.

"It was built by men and women like our seven star voyagers who answered a call beyond their duty, who gave more than what was expected or was required, and who gave it with little thought of worldly reward."

These words were authored by the President at that time, Ronald Reagan, on the 31st of January, 1986, and I believe they still ring true today, a special day indeed.

Well, that's our focus on people, but we thought because we told you we would give you a couple updates as we go and if anything significant had changed overnight we would try to keep you abreast of what is developing.

We are making considerable progress now in the area. In fact, I've asked to show you a video, which will be displayed now, to give you a sense for where the known debris field has been established and where much of the activity in terms of our command post, the combined activity, the federal, state, and local agencies have been aggressively involved over the weekend and continuing today in the priorities of maintaining public safety, trying to do the right things in terms of recovering our fallen ones and to expeditiously return them home; to focus on preserving the accident investigation so ultimately we can get to the bottom of what happened and ultimately to get back into fixing the problem and moving on into flight.

We've had a lot of progress. There's been a lot of activity over the night. Thanks to a lot of the local law enforcement peoples and from the protocols were developed for the early removal of some of the material in terms of dealing with the hazardous material, we were able to get the school yards cleared I think in about seventeen Texas counties, so the schools will open as normal tomorrow. And that was a yeoman's work over the evening to get the debris areas cleared out of that area.

I think you saw some of the media reports on some of the pieces and you get a good sense for a lot of the material that is on the grounds in various locations. The National Guard is actively employed now protecting those sites, and I think you probably also noticed on television today that the Accident Investigation Board under Admiral Gehman is now on-site and reviewing the debris field in the area around Lufkin.

We also were able to find recently into the -- just into the state of Louisiana some of the larger, more dense pieces. We think they're probably one or more of the engines, and those are now secure in the process over the next few days will be recovered.

There's also been and were reported the potential for some material much further out to the west, and obviously as Mr. Dittmore mentioned in the technical presentations yesterday, early material in the debris field is extremely important to the early events of the recovery that would shed important light on what the ultimate cause was.

We've had reports and that there are pieces on the ground in California and Arizona, and we have dispatched -- because feel these results are potentially credible, we have dispatched NASA recovery teams to go and take a look at this material.

And obviously we're working closely with the EPA and FEMA to ensure that if this is hazardous material, the same type of protocols and the same type of protections are available and in place in these states as well.

And finally I would like to leave you with a thought that we will continue the analysis. There has been some ongoing, but most of the team has stood down today to attend the memorial, I'm sure you understand that, and we will begin work aggressively. And some of the analysis is continuing. We'll have an update for you tomorrow afternoon.

I know there are questions about the thirty-two minutes of data that we think perhaps we can recover. That work is continuing. Perhaps we will have some preliminary results on that material as early as tomorrow's briefing.

The engineering folks are looking at the timelines along the left side of the vehicle in terms of where these sensors are and we've reported to you the time sequence of where the engineering anomalies were appearing and they will be mapping those against the actual substructure to get a better sense for what the flow was.

In terms of the International Space Station, I know there's been a lot of questions on the impact of the International Space Station and what it means with the Shuttle fleet down at this time. I am pleased to report we were successful in the docking of the Progress today. The hatches that have been opened and the Expedition Crew is resupplied, so the International Space Station for resupply will be solid and survivable through the June timeframe without a shuttled support.

With that, I want to thank you all for coming and thinking about the people who are involved in this. As I said yesterday, it's the people that we are about in this one NASA and this is a day oriented towards them and the families.

ROBERT MIRELSON: Thank you, sir. Just a reminder, if we could, when I call on you, please wait for the microphone and please state your name and your agency, and please just ask one question.

And then, like I said, we'll start here at the Headquarters and then we'll move to the Johnson Space Center.

So let me just start in the back here with the Orlando Sentinel, we'll kick off, we'll come down, across, and then we'll go out to Johnson.

NEWS MEDIA: Mark Matthews, Orlando Sentinel. General, have you found the debris in Arizona, California, and New Mexico, any of those reports tiles?

GENERAL KOSTELNIK: It's not clear what the material is. I think we have had some e-mail correspondence that potentially looks like it could be either that or potentially wing material.

If it is wing material, obviously that would be very important to the investigation. So without speculating precisely what it is, the sources were credible enough to cause us to send a NASA team out to take a look, and I'm sure that what they find will be reported as soon as it's made available.

ROBERT MIRELSON: Okay. Right over here, sir.

NEWS MEDIA: Don Phillips with the Washington Post. Could you -- now that you've had a chance to take a look at a mass of telemetry and some of the wreckage, could you go into a little detail about what exactly you hope to learn technically from the wreckage itself, and has any of that wreckage so far included identifiable pieces of the left wing or the left fuselage?

GENERAL KOSTELNIK: It would be pure speculation on my part having not been to the debris field myself, and I think Mr. Dittmore yesterday in his technical analysis answered many of those questions, but certainly early debris early in the flight path would be critical because that material would obviously be near the start of the events. It would clearly be very important to see the material earliest in the sequence.

Material on the ground towards the end and obviously once the catastrophic event has occurred could be less significant to the event, but at this time when we really do not know what the cause of the failure mechanism is, it's very important to acquire as much data as we can.

Unlike aircraft who carry crash survivable recorders which provides a lot of data on the ground, NASA receives, because of the instrumentation, a lot of data in flight, and of course it takes time to analyze and incorporate that.

So tomorrow I think you can get a good sense for where the engineering team is in that process.

ROBERT MIRELSON: Okay. We'll just work our way down here. Yes, sir. Wait for the microphone, please.

NEWS MEDIA: David Sanger from the New York Times. I'm wondering if your review of history from past flights have indicated to you whether ice or insulation were the greatest cause of debris falls from the external tank, and whether you've ever any indication in the past of a combination of those two or a peeling of the insulation that might have allowed ice to build up.

GENERAL KOSTELNIK: Well, any debris on ascent is obviously a concern, and as Mr. Reedy pointed out yesterday because of the fuels that are in the external tank, icing is clearly a problem, especially under adverse environmental conditions, so there are very close attention paid to ice, and ice build up of a certain percentage would obviously be a constraint to flight and we would not launch. So obviously ice is a serious problem.

We have had minor separations of foam in the past but there's never been a safety of flight issue from that material, but any type of FOD is clearly something we would be concerned with and we have gone to great lengths to avoid those where possible.

NEWS MEDIA: Any minor separation before launch or afterwards?

GENERAL KOSTELNIK: No, during the process.

NEWS MEDIA: During the process.

GENERAL KOSTELNIK: Yes.

ROBERT MIRELSON: Just let me, when General Kostelnik said FOD, foreign object damage.

GENERAL KOSTELNIK: Right.

ROBERT MIRELSON: Just for the acronym. We'll come over here and then we'll come back across.

NEWS MEDIA: Brian Berger with Space News. General, I'm wondering if you can give us a sense of what kind of perhaps contingency planning activities the ISS team, the Space Station team, is doing this week.

GENERAL KOSTELNIK: Well, we are starting to look at all options for how to sustain the human presence in space flight. Obviously, as I've mentioned, we have the consumables on board the station in terms of prop to keep the station on orbit, to life support, to provide the crew.

Oddly enough, one of the important constraints is water on board the International Space Station, and of course we bring this up with the progress vehicles and also with the Shuttle.

So there is a lot of contingency planning oriented around the people. People, again, as I mentioned, are our primary concern and of course the station is important, but most important are the two astronauts and one cosmonaut we have in Expedition 6 up there right now.

So obviously we will be looking over the next few months trying to get a sense of when we will be able to get this problem discovered, the problem fixed, and the shuttle fleet back on line supporting assembly.

In the interim, we do have other international partner assets, Soyuz vehicles, progress vehicles for resupply that could be beneficial. So we will be looking at options as we get into the spring for ways to perhaps swap out the crews or relieve them or put up a different expedition crew perhaps through the use of a Soyuz vehicle.

A lot of issues or concerns with that. We still have some time to do that, but those are kinds of things we're going through, different options to ensure we have the ways to keep the crew safety.

And as I mentioned, we will be launching a Soyuz as planned in April out of Baikonur, and of course that will replace the crew return Soyuz that is on orbit, so at all times we will have a vehicle docked to the station if we ever were to decide to bring the crew home.

ROBERT MIRELSON: Okay. Sir, over here on the right side.

NEWS MEDIA: Cam Simpson from the Chicago Tribune. General, one of the things that was supposed to be completed by today, at least hoped for, was a reanalysis of the size and weight of the debris that came off the exterior fuel tank. Has that been completed and can you tell us what the status is?

GENERAL KOSTELNIK: I think Mr. Dittmore gave you the latest we have on that from the computer estimates. I believe it was a piece 20 by 10 by 6, about two and a half pounds, you know, well reported. The engineering team that will be analysis in that regard are the ones that are at Johnson and they are at the memorial today.

So, again, this is a special day to think about and reflect on the impact of what this means for this very close-knit team. And if you saw the memorial as I did today, you probably got the sense that this is a significant impact not only for the families but for the team that supports these families.

ROBERT MIRELSON: I'll come to the middle and take about two or three more questions, then I'm going to go out to Johnson, then I will come back to Headquarters.

NEWS MEDIA: Tracy Watson, USA Today. How much ice is allowed on the external tank for launch to proceed and how much ice was on it on the 16th?

GENERAL KOSTELNIK: I think we can take that question -- I don't know personally, but Mr. Dittmore would and I think we can address that in his opening remarks tomorrow.

There are a specification for that. We have cameras to watch and inspection teams, as Mr. Reedy pointed out yesterday prior to launch once the vehicle is fueled to keep a close eye on that, so I think that we can provide that for you as a matter of record.

ROBERT MIRELSON: Also on the questions like that, we'll follow up with Al Fineberg, we'll take those questions and if we need to follow up today, if we can't get the information out of Johnson for tomorrow, we'll get it for you today.

I believe you had -- I don't know you. If you would just identify yourself, please.

NEWS MEDIA: Yes, it's Talesha Reynolds, I'm from ABC News. And I wanted to know, the Air Force has the ability to take photographs of the Shuttle upon reentry and I just was wondering if those photographs were helpful, have been helpful in revealing any information as to what's been going on, say, in New Mexico or Arizona.

GENERAL KOSTELNIK: Well, I think there is a lot of information that will be forthcoming from a lot of means and those informations are being forwarded to the

Mishap Response Team and they will be given to the Accident Investigation Team, and I think many of those will be quite helpful.

As an example, it's not only the Air Force but it turned out there was an Apache helicopter that was flying in Texas during the event and happened to record optically the flight of the Shuttle across that, and that imagery is in the process of getting to the Johnson and that will be an analysis.

So there will be a lot of looking at those to help and certainly they will be helpful.

NEWS MEDIA: Will they be released?

GENERAL KOSTELNIK: They'll be -- it's really up to the Accident Investigating Board to make those decisions. At some point I'm sure that they will be.

ROBERT MIRELSON: Okay. Down here, sir.

NEWS MEDIA: Ricardo Alonzo Saldavar with the LA Times. Can you flesh out for us a little bit more the discussions that took place about the possible consequences of

the foam impact on the Shuttle, how many people were involved? Was it NASA, contractors?

And also can you address, Ron brought up yesterday that there have been some reservations expressed. Were those reservations expressed at any stage of this discussion process?

GENERAL KOSTELNIK: There's a lot in that question, probably better answered by Ron and the team there.

Let me say that the issue of FOD on ascent has been a serious concern for a long period of time. That is not a new phenomenon. There's a lot -- great deal of work on this and many of the things we have done over the years have been to reduce the opportunity for that and to understand that.

I think the information you're talking about in terms of the analysis of the ascent issue during the sequence that we provided you and hopefully everybody got a copy of the day-to-day discussions from the Mission Evaluation Room, that's the debate that I assume you're addressing.

I am not privy to the details of that. We certainly receive the daily reports in the Headquarters with those observations. It wasn't clear at the time what the debate was. And I think Ron, although he didn't participate in those particular things, accepted the judgment of those teams of professionals, and I don't -- I'm not sure that he has said that there was dissent necessarily, he said he just didn't know. So at some point I think that would be a good question as we move further along for the technical crowd down there.

ROBERT MIRELSON: Okay. Let me take one more question from the Headquarters and then we'll go to Johnson.

NEWS MEDIA: I'm Debbie Zaboranco, I work for Reuters. This is sort of piggybacking on your question, it sounds like a small point but it's sort of interesting to me. Were the astronauts aware of these discussions? Did they see these reports?

GENERAL KOSTELNIK: I can't answer that question. As a matter of fact, I would be surprised if they were not. Most of the anomalies are discussed with the crew in the same way that we're having the discussions of the ongoing events with the crew that's on the International Space Station, but I don't know that personally, but that would be a good question that we could answer for you in Ron's remarks opening tomorrow afternoon.

ROBERT MIRELSON: Okay. We're going to go to the Johnson Space Center. Good afternoon, Johnson. Do you have a question for us?

NEWS MEDIA: Yes, this is Marcia Dunn of the Associated Press. In light of all the emerging reports of tank foam peeling off during numerous earlier flights, is it becoming clear, at least to you, that not enough time or effort went into the engineering analysis conducted during the Columbia flight? And do you know whether the chunk of foam that came off this time was the biggest piece so far in the program?

GENERAL KOSTELNIK: The answer to the last question I believe that if dimensions Ron gave prove out to be accurate, that probably is the largest piece. We have had other examples of foam departure, I think, a couple other times, smaller dimensions and none that have ever been a safety of flight issue in the previous hundred and twelve flights.

ROBERT MIRELSON: Okay. Johnson, thank you. Do we have another question out there?

NEWS MEDIA: Yes, please. This is Cherise Donte with the Palm Beach Post. And I'm curious, with the obvious value that having a shuttle go to the station in terms of a safe haven for the astronauts would have provided, has there been any discussion as of yet to make sure that all subsequent flights go at least within rendezvous distance of the station?

GENERAL KOSTELNIK: Well, I think in hindsight that's probably a good thought. We really haven't thought about the way ahead, we're really focusing now on this particular problem and trying to sort out what the cause is and then we'll be focused on the fix.

The next three vehicles, remaining vehicles we have all obviously do have the air locks and the connect points to go to the International Space Station, so certainly thoughts like that, depending on the solutions and the risk analysis as we move forward, those would certainly play in the things that we would take a look at.

ROBERT MIRELSON: That's a good point. We're going to move to the Kennedy Space Center. Good afternoon, Kennedy. Do you have a question for us?

NEWS MEDIA: Yeah, hi, this is Jim Banke of Space.com. General, this is sort of a big picture operations question. There -- still after these days after the accident and all the stuff that's appearing in the media, there are a lot of questions, it seems, in the public e-mails we get and certainly things we hear on talk radio about people just not understanding how you couldn't have a back-up plan for the possibility, for example, the tiles are damaged in orbit. And of course we know that NASA is famous for having B plans, C plans, and D plans for just about everything.

Could you discuss how in some cases in space flight you just can't have a back-up plan or how would you approach that, how would you explain that to the public?

GENERAL KOSTELNIK: Well, I think, you know, obviously space flight is a very dangerous business, it's an inhospitable environment, it's a tough challenge to get there. We've learned this over a long period of time going back to the early days of Apollo, through the Challenger experience, now the Columbia experience today. It's a very difficult environment and it's, you know, a challenge to have everything just like you would like it to be.

I believe our best response to that would be one of the incredible degrees we go to to try to get everything right, to make sure that there is redundancy on every activity, to make sure we have the robustness in the vehicle design to be safe, but there are not a lot of margins on some of these activities.

I think if one looks back over the history of the Space Shuttle Program, given the risk and the moving parts, it's been a remarkable record of accomplishments and safety given the toughness of the challenge we face.

Clearly with the International Space Station, we have more challenges to face, and as we look forward to what might come beyond, the further away we get from the globe, the more difficult these challenges are going to be.

So it's certainly a time to reflect on the difficulty that we face, but as the Administrator and the President said today again, going back to this job, going back into space and continuing on this journey is not an option, it is something that we are committed to do.

ROBERT MIRELSON: Thank you. Marshall Space Flight Center, good afternoon. Do you have a question for us?

NEWS MEDIA: This is Jay Reeves with the Associated Press. About four years ago the Air Force conducted tests on the foam problem for Marshall. The Air Force says NASA concluded that the loss of foam was being caused by a combination of heating, the pressure changes, and aerodynamic shear.

First of all, can you confirm those findings? Second of all, is there anything that could have been done to fix the problem?

GENERAL KOSTELNIK: I really can't confirm that report; I'm not familiar really with it. Obviously there's been, as I mentioned earlier, a lot of research and a lot of activity and I think, you know, we had changed the design -- the tank in terms of going from the lightweight tank to the super light tank, so there's been a lot of activity and a lot of focus on the foam in particular and how to attach it.

So this has been a continuing effort, but as we go back again over a long period of time in this area where we saw all this foam released, this is only the third occurrence of it in the flights that we have. So it is really kind of a phenomenon that kind of surprised

us. And, again, we're not sure what exactly caused it in this particular incident; this would be part of the investigation to determine the fact.

I think you know we have the material representatives, our best and brightest experts out at the Marshall Space Flight Center at the plant in Michoud actively looking at all of the process associated with the foaming and the tank to help understand what this process could be.

ROBERT MIRELSON: Okay. One more question from the Marshall Space Flight Center.

NEWS MEDIA: Tim Falk, Birmingham News. General, I understand during STS-107 you visited Marshall on January 21 and the next day Michoud. Were you briefed on the foam installation problem at that time and what were you told? Were any reservations expressed by anyone?

GENERAL KOSTELNIK: No, there really wasn't. That is true, it had nothing to do with the ongoing flight, that was an opportunity for me to visit the Marshall Space Flight Center. I was really looking at the International Space Station activity.

I did have an opportunity to go to Michoud and I will tell you honestly I was very impressed with that operation. It's a plant built during the war years, forty-three acres under roof; did a lot of the early Apollo, large assembly pieces, and it is a remarkable facility. And I saw nothing there that would give me pause for concern. I was very impressed with the craftsmanship, with the people and the dedication, it had nothing to do with the ongoing activity.

Recall that during the reports that we were getting throughout this period, these daily MER reports that now you have copies for, this is how we were judging this problem. Obviously we identified from the cameras into the eighty seconds an anomaly, you know, the next day, and the engineers at the -- in the program went back and were doing ongoing analysis.

Internal to NASA and external and throughout the process, you know, we determined that this was within family of the recent experiences that we had seen with foam separating on 112, which did not do significant damage to that orbiter, and within the history of the program we had ever seen a safety of flight issue from this type of impact.

So the engineering assessment based on the analysis of the actual flow, the photos, and the work that was done was that as was pointed out in the paper, we were probably going to get some localized damage from this impact. There could be some one or more tiles missing and perhaps some localized external structural problems, but nothing that would lead us to a safety of flight.

When that decision was made and vetted throughout the agency, you know, we were convinced we did not have a problem, and so really there wasn't any focus on that.

So no, my visit to Michoud really had nothing to do with the ongoing flight. Actually I was going to see an SSME engine firing to look at the flow liner problems that we had had earlier in the summer when we were working on cracks in the flow liners and also up to Thiokol to watch a fire -- a test firing of the solid.

So again, to tell you how much behind the scene goes on and continuing test analysis, development and improvement to ensure we don't have the types of things happen where we get surprised.

ROBERT MIRELSON: I apologize for cutting Kennedy Space Center out a little earlier there. I think my coffee is wearing off; I apologize.

Kennedy, let me come back to you for one last question and then we'll come back to the Headquarters and finish up our questions here.

NEWS MEDIA: Stacy Semenicki with Orlando Television. When the research data that was lost, how far will that set NASA back?

GENERAL KOSTELNIK: I'm sorry, I didn't quite understand your question.

NEWS MEDIA: When the research data that was lost from the Shuttle, how far will it set NASA back?

GENERAL KOSTELNIK: From the orbiter is lost?

NEWS MEDIA: The research that was lost, how far will that set you back?

ROBERT MIRELSON: We're coming in broken, Kennedy, I can't tell if you're asking about the SPACEHAB or if you're asking about the Shuttle itself.

NEWS MEDIA: When the science experiments that were lost, how far will it be for NASA to be set back to regain what was lost?

ROBERT MIRELSON: I think we have it now.

GENERAL KOSTELNIK: I don't have the details. Obviously a lot of the science was transmitted real time during the time period when it was actually accomplished, so obviously a lot of science on this particular mission was delivered real time to the customers.

Experiments that were depended on obviously returned to Earth will be lost, so unfortunately it was not as successful as one would have liked to be.

The SPACEHAB, the modules were fairly unique that were on the orbiters at the time, there are probably not immediate replacements for those, so it would put stand-alone science type missions at least in the near term at risk.

ROBERT MIRELSON: Thank you, Kennedy.

Let me start back on this side of the room over here with Nancy and let me start here in the front with Frank.

NEWS MEDIA: General, Frank Morning with Aviation Week. In addition to the contingency planning that's been going on since the accident, there was a lot of planning going on prior to the accident regarding the Space Station. Specifically a look among the partners at the configuration after core complete and about a year from now, and also some requirement work on the orbital space planning that I think was due yesterday, actually. I wonder if you could update us on where that planning is, if it's been stopped, and how you see it going forward now.

GENERAL KOSTELNIK: Well, you know, clearly most of the key officials in NASA are focused on the problem at hand and these other things are -- will be picked up when things get back to a little more normal.

On the international part, the question, we were -- we were in the middle of a process with our partners through the heads of agency plan that was agreed to by all the partners at Tokyo to work through the various configuration options that will lead us towards an opportunity of increasing the amount of crew time and science done on the International Space Station to meet the needs that we know are there.

That work will continue. Clearly it will be impacted by the shuttle fleet because the shuttle fleet is obviously tied to assembly and before we can complete and get to U.S. core complete, even though the bulk of the International Space Station is by and large completed and sitting at the Kennedy Space Center as we speak, we will still need to bring the remaining three shuttle fleets back on line to support engineering assembly, and of course that will be driven by when we can find and determine what the cause of this accident is, when we can develop a repair or a fix for whatever the problems may be, and convince ourselves and our populations that we are safe and ready to go back to flight. And there is no time sense on that. It will take whatever time it takes.

In the meantime, though, we will continue to study and work with our partners for how we can continue to support the International Space Station with the situation we have and get back to assembly and ultimately to U.S. core complete, that is, with a Node II, and to assembly the international partner elements, the Columbus module from ESA and the Kibo module from Japan, but clearly these things will be later than what we had anticipated before the loss of Columbia.

ROBERT MIRELSON: Okay. Again, in the front row here.

NEWS MEDIA: Bill Signs, Science Magazine. Could you elaborate a little bit on the decision process, how the engineering team came to the conclusion that the foam would not cause burn-through? Did they run simulations? Did they run MHD code? Did they look up reference tables that already had this data in it?

GENERAL KOSTELNIK: Yeah, I think the best people to answer that are the representatives of the team, or Ron, you know, speaking for them.

I know it's a very stringent process drawing on the past experience models and a lot of different activities. I can't tell you precisely how it's done.

I can tell you I have the utmost confidence that they did that as good as anybody could do. I think this is the same sense that Dittmore has in judging the competency and the quality of his team, and although he didn't personally participate in that discussion, he has the same confidence in that result that I do.

ROBERT MIRELSON: And let me go back to this side of the room right here, second row, excuse me, third row. Sorry.

NEWS MEDIA: Nancy Weaner with WJLA TV here in Washington. You mentioned the enormous size of this debris field and the fact that it continues to grow from day-to-day. Given the possibility of searching every inch of this area, do you have a sense at this point of how long the active search will continue and at what point you will decide that there are diminishing returns from continuing an active search?

GENERAL KOSTELNIK: Well, the Mission Investigation Team on-site in conjunction with federal authorities obviously will make that decision, and I think there are several things along the priorities that they've laid out for themselves in the total operation that is under the auspices of FEMA, and that is first a focus on public safety, and that's why they cleared the schools, they're clearing the roadways, they're doing the things that are obviously important and to keep the rest of the populous in that area safe. So certainly we will continue until all those things are complete.

More pressing in the area of recovering of the loved ones that are laying in the fields in various places, you know, we're not going to quit until we accomplish -- to accomplish the goals of recovering those individuals. And that will continue until it's done, whatever time it takes.

On the accident investigation side, obviously given the long field, they will obviously get and collect everything that's significant that they can find.

Will we be able to find everything? It's hard to say. Will at some point we end and move on? Yes, we will. Will we have gotten everything? We will have gotten all the big pieces, we will get everything we can find and I think we will get a fair percentage of it.

But when you look at the distances involved from just the graphic I showed you based on radar returns, after an event where a lot of things fell and notice there's potentially things throughout Louisiana and perhaps some things that went through Florida (sic) and we're certainly getting reports now of things in perhaps California and Arizona, it's a very long unprecedented track to deal with.

So as I said yesterday, there really are a few contingencies that you could compare this with. There's not a lot of experience. We will do the best we can with the resources we have and the U.S. Government, the federal agencies, the state agencies are leaving no resource behind to get this job done. I mean, it's a lot to do, but they're doing an incredible job on this, and I think this will take probably weeks rather than months to get this job done.

ROBERT MIRELSON: Okay. Down -- we'll just work our way down. Second row. Go ahead, sir.

NEWS MEDIA: Hello, Wilson Dodhuds with Government Computer News. As far as those two images that were displayed on the screen, could you describe what those blue dots on the screen really represent? You said the term "radar returns."

GENERAL KOSTELNIK: Right.

NEWS MEDIA: Is that what it is? Could you elaborate on that?

GENERAL KOSTELNIK: Yes, these are radar returns of vehicles actually tracked in the atmosphere and where their intended impacts were.

I know from your questions yesterday you're big into the information technology and a lot of those concerns and today that's one of the big areas they're discussing, because oddly enough in these counties around Texas, some of the best GIS systems for tracking ground map things, GPS coordinate descriptions, are actually in some of the county offices, and of course we're putting a lot of GPS type systems down there and in the process of transitioning what initially were maps with pins of where things were found into formal digital products to track the known and the expected debris field.

ROBERT MIRELSON: What I'm going to do, we're going to take a couple more from each side and then I know General Kostelnik has some meetings to get to.

Let me come down to the first row and we'll come to you and then we'll come to this side.

NEWS MEDIA: David Avonovich, Houston Chronical. You mentioned the credible reports you received of debris on the ground in California and Arizona. Can you tell us how many sites you're actually investigating now?

And also Mr. Dittmore mentioned last night, I think, that tile debris had been found in Fort Worth. Is that as far west you've confirmed tile debris at this point?

GENERAL KOSTELNIK: I'm not aware of the specifics and I defer to Ron on that, and I don't know the details of how many and what kind that we're investigating in California, only that there are more than one sites; there are sites in Arizona and in California where we suspect that there is some debris.

Although in Fort Worth today, I've been told that some of the material that people thought were associated with this incident really had nothing to do with the incident at all.

So it's easy to speculate, it's easy to be confused, there are a lot of things laying around the country, and these are fair things and the credible things we're trying to investigate consistent with the resources we can bring to bear that will, you know, help us in understanding what this incident is about.

ROBERT MIRELSON: Let me just make a comment on that, mainly through the great cooperation of the media, the public has been tremendously responsive, they've been responding to the Web sites, they've been responding to the hotlines, and I think a lot of people are reporting things that, you know, if they're not sure they're reporting it, which has led to a bit of a backlog of checking things, but, again, we appreciate you all getting the word out and it's been a tremendous help.

Right here in the second row.

NEWS MEDIA: (David Sanger) As you've reviewed the vulnerability of tiles that were underneath the Shuttle wing, was there any special vulnerability in the area right around these wheel wells that you're obviously now focusing on? Because there are openings there and a door there, have there been in the past any history that tiles have either come loose or are more vulnerable because of that uneven surface?

GENERAL KOSTELNIK: Not really that I'm aware of. I mean, that would be a good question to address to Mr. Dittmore tomorrow; he's been with the program a lot longer than I have.

Actually although I know there's a lot of issues with the tiles and so forth today, it's actually been a very robust system; it's actually worked very well in this process, they're light weight, they obviously do a good job on dissipating the heat and the system for more than twenty years and a lot of launches have served us very well.

Obviously anywhere we have seals on the lower part in the heat absorbing area, those are issues to be concerned with. It's probably premature to speculate that there are issues around the gear doors prop or the gear area. I recall a lot of the things that the engineers are now trying to track through have a lot to do with the symptoms and a lot of the feeds that we are getting from these areas, but many of these things perhaps

were driven by the lines that go to these devices rather than the entity, so that's exactly the area where I think the engineering community within the Shuttle is taking a hard look at to map the timelines along the actual indications we're getting as to what kind of feeds those were tied to and where they actually physically lay within the wing.

This is, I think, the part that Ron was trying to get a better sense for what's really happening. He doesn't, I think, you know, feel it's necessarily a gear door or a gear well issue necessarily. These are the parts that really are going to take some time and a great deal of analysis to understand.

Those are the kind of things the engineers are working aggressively through as we speak and I think there will be a lot more discussion on that as we learn more.

ROBERT MIRELSON: I apologize for the sound system at times. Either I misspoke or Johnson or Kennedy heard me a little bit, we were responding to the question about debris being possibly found in Fort Worth and I think it came out at the other end that we said Florida, and we were addressing the Fort Worth question. No debris has been found in Florida as they tell me they heard it at that end. So I apologize, Kennedy or Johnson, if it sounded like Florida, but we were talking about Fort Worth.

Brian? Brian Berger?

NEWS MEDIA: (Brian Berger) General, I'm wondering if you can tell us if NASA has called a halt to all Shuttle processing and related-manufacturing activity both at the field centers and the major contractor facilities like Michoud.

GENERAL KOSTELNIK: Well, I think Mr. Dittmore, you know, gave you the answer on that. Certainly on anything that's associated with manufacture processing to support something that could provide vital information, all of that activity has been impounded.

I think Mr. Dittmore told you about the flow processing we're doing clearly on the next vehicle that was in the VAB; we've stopped work on that.

The work that's in the OM -- the OMM on 103 is continuing if the work force feels like it's something they can do. This is very early in the time period, so we're not -- we're trying to do the right kind of thing for both people and the structure, and of course in this, most of the key things that could be evidence to support what the cause of this was has been impounded and over the next few days with the consent of the Accident Investigation Board authorities, we will start opening up things that are not clearly related or not supportive to continue on with activity. And some of that has started and it will continue to put us back in the business in areas that are not directly related to this accident.

ROBERT MIRELSON: I'll come back over here and then I'm going to take, like, two more questions and then we're going to have to wrap it up here.

NEWS MEDIA: General, Cam Simpson from the Chicago Tribune. Can you tell us from the last time foam separated from an exterior fuel tank to the most recent event? In that time period, was the manufacturing process of the foam changed was the application process changed or updated at all and can you give us an idea generally what kind of oversight there is on those contractors?

GENERAL KOSTELNIK: Well, we have a NASA management team in place at Michoud, and of course the contractors who work on this are an integral part of the team and I can tell you having been there, there is a very close oversight activity for both performance and the safety aspects associated with that.

No, there have been no process changes in terms of foam application. And, again, the experience that we found with foam separation on the 112 flight was within family of previous foam separations did minimal damage and was considered not to be a safety of flight issue.

ROBERT MIRELSON: Tracy, I didn't mean to skip you. Let me catch Tracy back here.

NEWS MEDIA: Tracy Watson, USA Today. You said a moment ago that there were only -- this is one of only three occurrences of foam coming off the tank. Is that true? Because I thought that it was popcorning and numerous instances when small bits of foam came off the tank.

GENERAL KOSTELNIK: To the best of my knowledge, there has only been three incidents of significance. There was an issue on popcorning, but I think they did change some of the processes associated with that. There were some changes, I believe, dictated by environmental protection laws that did cause some changes to the process sometime ago.

If we get down to, you know, how small a piece, how many times, I guess we could take that for the record and perhaps ask Mr. Dittmore to address that from Johnson tomorrow.

ROBERT MIRELSON: Okay. Let me take one more last question.

NEWS MEDIA: Frank Morning with Aviation Weekly. General, do you happen to know if the flight controls registered the impact at eighty seconds during ascent of that foam? And if not, could you take that question?

GENERAL KOSTELNIK: I don't know if they have. I haven't heard anything like that. That would be a fair technical question to ask and we'll pass that to program and ask Ron to address that tomorrow.

ROBERT MIRELSON: Let me thank you all very much. Let me just say if I can get the control team to put up what we've asked, again, your cooperation on the debris and the hotline. Most of you have seen this; we appreciate the great word you've gotten out.

Just a couple of quick announcements. Tomorrow's schedule, we will do a press conference here at 11:30 a.m. Eastern Standard Time tomorrow. I haven't had final word yet, but we may have a spokesperson reference some of the science questions we've gotten about 107 that's in the works as one of our speakers.

Tomorrow afternoon at 4:30 p.m. Eastern time at Johnson Space Flight Center, Ron Dittmore and I don't know who else will be on the dais with him, will pick up their briefings out there.

On Thursday there will be no briefing here out of respect to the memorial ceremony which is at the Washington Cathedral at 10:00 a.m. in Washington. There will be a 4:30 p.m. briefing out of the Johnson Space Flight Center on Thursday.

So I thank you all very much. General Kostelnik, thank you very much.

Any follow-up questions, Al Feinberg at the Space Flight PAO and his team is here and will be there to help you out with anything else you need. Thank you.